Electric Technology U.S.S.R.

U. of ILL. LIBRARY
OCT 7 1971
CHICAGO CIRCLE

Index to the 1970 Volume

Published by

PERGAMON PRESS LTD.

OXFORD LONDON PARIS NEW YORK

ELECTRIC TECHNOLOGY, U.S.S.R.

EDITORIAL BOARD

H. M. BARLOW, *London;* F. W. BOWDEN, *San Luis Obispo;* F. BRAILSFORD, *London;* G. S. BROWN, *Cambridge, Mass.;* F. M. BRUCE, *Glasgow;* C. C. CARR, *Brooklyn;* G. W. CARTER, *Leeds;* A. G. CONRAD, *New Haven, Conn.;* G. F. CORCORAN, *College Park, Md.;* J. D. CRAGGS, *Liverpool;* A. L. CULLEN, *Sheffield;* G. E. DREIFKE, *St. Louis;* A. R. ECKELS, *Vermont;* W. FISHWICK, *Swansea;* C. FROEHLICH, *New York;* C. G. GARTON, *Leatherhead;* J. GREIG, *London;* L. D. HARRIS, *Salt Lake City;* J. D. HORGAN, *Milwaukee;* E. C. JONES, *Morgantown;* E. C. JORDAN, *Urbana;* I. H. LOVETT, *Rolla, Missouri;* J. M. MEEK, *Liverpool;* J. H. MULLIGAN, JNR., *N.Y.;* J. E. PARTON, *Nottingham;* H. A. PETERSON, *Madison;* A. PORTER, *London;* J. C. READ, *Rugby;* W. G. SHEPHERD, *Minneapolis;* W. P. SMITH, *Lawrence, Kansas;* PHILIP SPORN (Chairman), *New York;* J. A. STRELZOFF, *East Lansing;* F. W. TATUM, *Dallas, Texas;* C. V. O. TERWILLIGER, *Monterey;* D. H. TOMPSETT, *Stafford;* A. TUSTIN, *London;* S. REID WARREN, JNR., *Philadelphia;* A. R. VAN C. WARRINGTON, *Stafford;* A. H. WAYNICK, *Pa.;* E. M. WILLIAMS, *Pittsburg;* F. C. WILLIAMS, *Manchester;* H. I. WOOD, *Manchester;* C. M. ZIEMAN, *Ohio;* R. S. GENS, *Portland.*

Translator/Editor: O. M. Blunn

ELEKTRICHESTVO

Nos. 10, 11 and 12, 1970

Editor-in-Chief: D. V. RAZEVIG

EDITORIAL BOARD

A. A. AFANAS'EV, A. I. BERTINOV, V. G. BIRYUKOV, V. A. VENIKOV, I. S. YEFREMOV, L. A. ZHEKULIN, D. G. ZHIMERIN, A. M. ZALESSKII, P. M. IPATOV, M. P. KOSTENKO, L. G. MAMIKONYANTS (*Assistant Chief Editor*), L. R. NEIMAN, I. I. PETROV, S. I. RABINOVICH, A. M. FEDOSEEV, M. G. CHILIKIN, A. S. SHATALOV.

Four volumes per annum. Approximately 700 pages per annum.
Annual Subscription Rate £48 ($120)
Single volumes may be purchased for £12.50 ($31.50)

Orders should be sent to the distributors at either of the following addresses

Headington Hill Hall, Oxford OX3 0BW
Maxwell House, Fairview Park, Elmsford, New York 10523, U.S.A.

Copyright © 1971 Pergamon Press Ltd.

PUBLISHED QUARTERLY BY

PERGAMON PRESS

OXFORD · LONDON · PARIS · NEW YORK

1970 VOLUME 1

CONTENTS

N. N. BELYAKOV, O. V. VOLKOVA, V. S. RASHKES and V. P. FOTIN: A study of switching surges in the electrical gear in operation in a prototype 750 kV transmission 1

V. A. IVANOV and V. A. KALENIK: Dynamic stability of inter-system transmissions controllable by large steam turbine sets 20

L. A. KUCHUMOV, A. K. CHERNOVETS and YA. YA. YARVIK: Mathematical modelling of large controlled reactors 28

A. D. STEPANOV, N. A. POGARSKII, L. E. REGIRER, M. I. AKSENOV and N. V. RAZIN: A diesel–electric transmission with motor-wheels 40

A. YE. ALEKSEEV, L. P. GNEDIN, P. M. IPATOV, M. P. KOSTENKO and R. A. LYUTER: Turbo- and hydroelectric generator developments in the U.S.S.R. 49

G. T. ADONTS: An algorithm for steady state analysis of a power system with regard to the non-linear characteristics of generators and loads 59

YA. B. KADYMOV and Z. YA. KULIEV: On the calculation of transients in systems with distributed parameters and a non-linear element 71

S. I. LUR'E: On the accuracy of double probe measurement of gradients in mathematical field simulation 80

R. R. PARTS: On determining the equivalent impedance of induction-type MHD machines with solid secondary system 91

A. M. RYVKIN: Calculating the temperature rise of contact surfaces due to short arcs in the interruption of alternating current 102

A. V. IVANOV and V. P. LARIONOV: Ionization zone charge distribution in creep discharge . 110

B. A. KONSTANTINOV and G. L. BAGIEV: Financial losses due to deterioration of voltage quality 119

Abstracts of articles not translated from Elektrichestvo Nos. 1–3, 1970 124

1970 VOLUME 2

CONTENTS

V. A. Venikov, B. I. Golovitsyn, V. D. Kovalev, I. S. Rokotyan and D. A. Fedorov: Analysis of error in solving optimal load distribution problems by means of digital computers 1

A. N. Chernyshev, V. L. Grushko and M. L. Prudkov: On damping "elastic oscillation" of automated d.c. drives 18

A. M. Ryvkin: Arcing at the main contacts in switchgear 30

M. I. Mantrov: Calculating the thermal breakdown voltage of solid dielectrics . . . 38

V. V. Il'inichnin: Methods for calculating the transfer function of a complex circuit . . 47

V. P. Klimov: On the electromechanical characteristics of electric drives consisting of a thyristor and a d.c. motor with series excitation 62

M. V. Tarnizhevskii: Design study of combined stray-current protection for underground metal structures laid in parallel 74

M. S. Libkind, A. S. Manevich and V. M. Sorokin: Long transmission line with controlled reactors at the receiving end 94

G. V. Yermakov: The phases of nuclear power station construction in the U.S.S.R. . . 105

E. G. Berlyand, M. I. Gurarii, V. V. Yershevich, Yu. S. Lapitskii, A. A. Okin, M. G. Portnoi and A. A. Khachaturov: Operating conditions, stability and controls of the Donbass–Dnepr–Vinnitsa–Lvov 750 kV inter-tie 112

R. T. Levshunov, R. D. Vishnyakov and A. A. Novikov: Insulator contamination-discharge characteristics under the combined action of 50 c/s voltage and switching surges . . 126

N. I. Sokolov, V. G. Mironov and V. A. Shchedrin: Synthetic inductances for a.c. analysers 132

Abstracts of articles not translated from Elektrichestvo Nos. 4–6, 1970 140

Note by English Editor 154

1970 VOLUME 3

CONTENTS

V. V. Afan'asev and A. D. Krastina: New methods for measuring voltage in high-voltage networks 1

V. V. Afanas'ev, V. P. Zubkov and A. D. Krastina: Optico-electronic current transformers 18

A. M. Bronshtein and Yu. N. Ioffe: Design study of a proto-type high-voltage valve-mechanical circuit breaker 33

V. V. Il'inichnin: Transient operating conditions of current transformers with RL load . 46

A. V. Berezhnoi and G. Ye. Pospelov: On the reliability of new transmission systems in technico-economic pre-selection of the rated voltage 57

A. I. Yakobs: Reduction of multi-layer electric structures of earth to two-layer structure equivalents in designing complex earthing systems 65

V. D. Urin, Z. D. Totladze and S. G. Zlotnik: Refinement of methods for optimizing power system duty 75

E. G. Berlyand and M. I. Gurarii: How intermediate loading influences the variation of current and power in inter-system tie lines in out-of-step conditions 82

Ye. A. Boldyrev, L. I. Vorotnikova and G. S. Yepifanova: Physical and mathematical modelling of inverse voltage recovery across series-connected valves 90

Yu. P. Zlobin and Ye. L. Kessel': On noise in amplifiers with negative current feedback . 102

A. S. Tarshis: Inductive energy storage for increased commutation capacity of high voltage circuit breakers 108

S. I. Kostruba: Mathematical modelling for systems of ensuring electro-safety 116

Abstracts of articles not translated from Elektrichestvo Nos 7–9, 1970 125

1970 VOLUME 4

CONTENTS

B. M. LAKS: Allowing for motor e.m.f. internal feeback in calculating the reserve of voltage in double-integration systems of speed control 1

V. A. NAIDIS, L. M. POLYAKOV and B. I. SHKLOVSKII: Analysis of thyristor convertor power circuits 13

G. T. GREK and S. YA. PETROV: Differential protection of bus-bars by biassing . . . 26

E. M. BAZELYAN and YE. A. SADYKHOVA: Orientation of long sparks 43

V. S. RASHKES, M. O. GAL'PERINA, S. M. POPOV, R. KOSHTALYUK, A. IVANOVSKII and A. KMECH': Surges on a reactor and transformer at 500 kV in switching the reactor by a VV-500-type circuit breaker 51

R. I. KARAEV and L. Z. SHENKMAN: Classical method of calculation for the oscillation of current and voltage on disconnecting a long line 74

CH. M. DZHUVARLY, YE. V. DMITRIEV and E. M. DZHAFAROV: Allowing for the skin effect in earth in surge studies at the switching point on closure of 500 kV lines 83

A. L. VAINER: Current off-flow from reinforced concrete footings in poor conducting ground . 90

M. V. TARNIZHEVSKII: Improving the performance of combined anti-corrosion protection for underground metal structures 100

A. S. MAIKOPAR, E. S. GLEBOV and K. D. VOL'POV: Methods of assessing the work-capability of line insulation using "moist-discharge" characteristics 122

A. A. RAGOZIN and S. V. SMOLOVIK: Effect of additional electromagnetic moments on the motion of a hydrogenerator rotor in the presence of asymmetrical short circuits . . . 131

KH. F. TAMMET: Volt–ampere characteristics of homopolar corona discharge 140

Abstracts of articles not translated from Elektrichestvo Nos. 10–12, 1970 142